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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,276	02/04/2004	Stefaan De Bondt	016782-0299	2068
22428	7590	06/30/2006	EXAMINER	
FOLEY AND LARDNER LLP			GRAY, JILL M	
SUITE 500			ART UNIT	
3000 K STREET NW			PAPER NUMBER	
WASHINGTON, DC 20007			1774	

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/771,276

Applicant(s)

DE BOND ET AL.

Examiner

Jill M. Gray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-31,33-36 and 38-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-31,33-36 and 38-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 26, 2006 has been entered.

### ***Response to Amendment***

The rejection of claims 1, 3-31, 33-36, and 37-49 under 35 U.S.C 112, first paragraph is moot in view of applicants' amendments.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-31, 33-36, and 38-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soens 4,664,971 in view of European Patent Publication abstract EP 0953651 B1 (Marandel '651), for reasons of record, in view of Everett 2,050,298 or Webber et al, 3,379,000 (Webber).

Soens discloses plastic articles, threads and grains for use in EMI shielding or antistatic plastic articles comprising a polymer matrix and stainless steel fibers having a

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diameter of more than 0.5 $\mu$ m, per claims 1, 31 and 36. See abstract, column 2, lines 20-25 and column 3, line 7. In addition, Soens teaches that the volume of fibers can vary between about 0.03% vol and about 0.5% vol as required by claims 4-8. See column 2, lines 58-59. It should be noted that Soens also teaches fiber plastics composites wherein the %vol of the resin is within applicant's range as set forth in claims 34 and 39. See column 3, lines 64-67. Also, Soens teaches plastic articles having a thickness within the range of applicant's claims 9-10 (column 2, lines 42-43) and grains having a length within the range as claimed in claims 40-41 (column 4, lines 22-24). The polymer matrix can be a thermoset polymer or thermoplastic polymer of the type contemplated by applicants in claims 12-14, 35, and 42. See column 5, lines 26-30 and claim 6. Further, Soens teaches plastic articles that have a shielding effectiveness of at least about 25 dB, as required by claims 15-23. See column 2, lines 12-14. Soens teaches at column 3, lines 7-13 that stainless steel fibers formed by a method of bundle drawing as described in U.S. Patent No. 2,050,298 (Everett) or 3,379,000 (Webber) show particular suitable intrinsic conductive properties for his invention. Accordingly, Soens teaches the usage of bundle drawn stainless steel fibers, as required by applicants. Soens does not teach the specific composition of his stainless steel fibers or that his fibers satisfy the relationship of claims 1, 3, 31, 33, 36, 38, and 46-49, the fracture strength standard deviation or strain at fracture required by claims 24-30.

Marandel teaches in the abstract stainless steel fibers having a diameter within the range taught by Soens and as required by applicants, said stainless steel fibers having a composition comprising iron and C, Mn, Si, Ni, Cr, Mo, Cu, N, S, and P, each

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component present in the amount contemplated by applicants in claims 1, 31 and 36, further teaching that the fibers can be coated with a metal such as copper (per claims 29-30) and that said composition satisfies the relationship as required by claims 1, 3, 31, 33, 36, 38, and 46-49. In addition, Marandel teaches that his steel fibers have a strength of more than 2000Mpa as required by claim 26.

The use of stainless steel fibers in the formation of EMI shielding and antistatic plastic articles is well known in the art. The skilled artisan would have had a reasonable expectation of success of obtaining an EMI-shielding article with the incorporation of any stainless steel fibers known in the art as the conductive fibers of Soens. Though Soens is silent as to the specific stainless steel fibers used, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the stainless steel fibers of Soens, fibers of the type taught by Marandel, with the expectation of a known component functioning in its known manner. As to claims 24-25 and 27-28, since the stainless steel fibers of Marandel are of the same type as applicants, the examiner has reason to believe that properties such as the fracture strength standard deviation, strain at fracture standard deviation, strain at fracture, and diffusion at a depth of 100 nm are the same or similar to these properties contemplated by applicants. There is no factual evidence on this record to the contrary. Applicants are invited to provide such evidence. Regarding claim 11, this claim is drawn toward the size of the plastic article wherein changes in size ordinary are not a matter of invention in the absence of evidence to the contrary. Regarding claims 43-45, Soens teaches the desirability of bundle drawn stainless steel fibers. It would have been

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obvious to reduce the diameter of the stainless steel fibers and thereby modify the reduction deformation during routine experimentation commensurate with the desired finess of the steel fibers and as is known in the art, evidenced by the teachings of Soens, Everett and Webber.

Therefore, the combined teachings of Soens, Marandel '651, Everett and Webber would have rendered obvious the invention as claimed in present claims 1, 3-31, 33-36, and 38-49.

4. Claims 1, 3-5, 9-11, 13, 15-17, 21-30, 36, and 38-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rivas 5,904,980 in view of European Patent Publication abstract EP 0953651 (Marandel '651) for reasons of record, further in view of Soens 4,664,971 and Everett 2,050,298, both as applied above.

Rivas discloses EMI and ESD reinforced plastic materials comprising polymers and additive such as stainless steel fibers, per claims 1 and 36. See abstract. In addition, Rivas discloses that the polymer can be present in approximately 95% to 85% and the additive is present in amounts of 5% to 15%, as required by claims 4-5 and 39. See column 1, lines 42-43. The polymer can be a thermoplastic as required by claim 13 and the article can have a thickness within the ranges set forth by applicants in claims 9-10 and 40-41. See Example 1. Furthermore, the formations of Rivas have an EMI shielding effectiveness at or above 35 decibels, as required by claims 15-17 and 21-23. See column 6, lines 2-6. Rivas does not teach the specific composition of his stainless steel fibers or that his fibers satisfy the relationship of claims 1, 3, 30, 33, 36, 38, and

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46-49, nor bundled matrix, the fracture strength standard deviation or strain at fracture required by claims 24-30.

Marandel, as set forth above, teaches in the abstract stainless steel fibers having a diameter within the range taught by Rivas and as required by applicants, said stainless steel fibers having a composition comprising iron and C, Mn, Si, Ni, Cr, Mo, Cu, N, S, and P, each component present in the amount contemplated by applicants in claims 1, 31 and 36, further teaching that the fibers can be coated with a metal such as copper (per claims 29-30) and that said composition satisfies the relationship as required by claims 1, 3, 31, 33, 36, 38 and 46-49. In addition, Marandel teaches that his steel fibers have a strength of more than 2000MPa as required by claim 26.

The use of stainless steel fibers in the formation of EMI shielding and antistatic plastic articles is well known in the art. The skilled artisan would have had a reasonable expectation of success of obtaining an EMI-shielding article with the incorporation of any stainless steel fibers known in the art as the conductive fibers of Rivas. Though Rivas is silent as to the specific stainless steel fibers used, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the stainless steel fibers of Rivas, fibers of the type taught by Marandel, with the expectation of a known component functioning in its known manner. As to claims 24-25 and 27-28, since the stainless steel fibers of Marandel are of the same type as applicants, the examiner has reason to believe that properties such as the fracture strength standard deviation, strain at fracture standard deviation, strain at fracture, and diffusion at a depth of 100 nm are the same or similar to these properties contemplated

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by applicants. There is no factual evidence on this record to the contrary. Applicants are invited to provide such evidence. Regarding claim 11, this claim is drawn toward the size of the plastic article wherein changes in size ordinary are not a matter of invention in the absence of evidence to the contrary. Regarding claims 43-45, Soens teaches at column 3, lines 7-13 that stainless steel fibers formed by a method of bundle drawing as described in U.S. Patent No. 2,050,298 (Everett) or 3,379,000 (Webber) show particular suitable intrinsic conductive properties for use in EMI shielding or antistatic plastic articles comprising a polymer matrix and stainless steel fibers. Accordingly, Soens and Everett teach bundle drawn stainless steel fibers, as required by applicants. It would have been obvious to reduce the diameter of the stainless steel fibers and thereby modify the reduction deformation during routine experimentation commensurate with the desired finess of the steel fibers and as is known in the art, evidenced by the teachings of Soens, Everett.

Therefore the combined teachings of Rivas, Marandel, Soens and Everett would have rendered obvious the invention as claimed in present claims 1, 3-5, 9-11, 13, 15-17, 21-30, and 36, 38-49.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 3-31, 33-36, and 38-49 have been considered but are moot in view of the new ground(s) of rejection.

No claims are allowed.

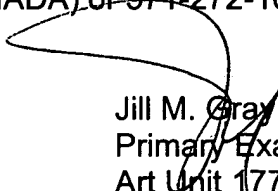


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jill M. Gray  
Primary Examiner  
Art Unit 1774

jmg